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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/593,479	09/20/2006	Koshiro Yokota	0216-0523PUS1	3210

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EXAMINER

BOYKIN, TERRESSA M

ART UNIT	PAPER NUMBER
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1796

NOTIFICATION DATE	DELIVERY MODE
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03/10/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No. 10/593,479	Applicant(s) YOKOTA ET AL.	
	Examiner Terressa M. Boykin	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 September 2006 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>12-20-06</u> | 6) <input type="checkbox"/> Other: _____ |

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*** Note that all responses to this action should be sent to Art Unit 1796 .**

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6 are rejected under 35 U.S.C. 102(b) as being anticipated by USP 5972273 note cols. 1- 32 or USP 5932683 cols. 2-8 and claims; or USP 5852156 see cols. 1-4 and claims or 5719254 see cols. 1-4 and claims.

USP 5972273 a method for producing a homogeneous polycarbonate composition, specifically, a method for producing a homogeneous polycarbonate composition of a polycarbonate and an additive, which comprises feeding a main polycarbonate in a molten state to a first inlet of an extruder, while feeding a resin/additive mixture of an auxiliary polycarbonate and at least one additive to a second inlet of the extruder, wherein the second inlet is disposed downstream of the first inlet, and extruding the main polycarbonate and the resin/additive mixture through the extruder. By the method of the present invention, additives can be uniformly dispersed in a molten polycarbonate, so that a polycarbonate composition having various excellent properties can be produced efficiently. For example, when a thermal stabilizer is added to and mixed with a molten polycarbonate by the method of the present invention, a polycarbonate composition having excellent thermal stability can be produced efficiently.

The reference states"

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"the main polycarbonate and the auxiliary polycarbonate may be the same or different. In the present invention, "the main polycarbonate and the auxiliary polycarbonate are the same" means that the respective structures and molecular weights of the main polycarbonate and the auxiliary polycarbonate are identical to each other, which are usually obtained by the same production method. On the other hand, "the main polycarbonate and the auxiliary polycarbonate are different" means that the main polycarbonate and the auxiliary polycarbonate are different in structure, molecular weight or production method. As a method for obtaining an auxiliary polycarbonate which is the same as the main polycarbonate, there can be mentioned a method in which a portion of the main polycarbonate in a molten state is taken before feeding of the main polycarbonate to a first inlet of an extruder, or a method in which a portion of the polycarbonate composition obtained by the method of the present invention is used, wherein the polycarbonate component of the polycarbonate composition serves as the auxiliary polycarbonate which is the same as the main polycarbonate. "

With respect to the molecular weight of the auxiliary polycarbonate, there is no particular limitation. However, from the viewpoint of improving dispersion of the additive in the main polycarbonate, it is preferred that the auxiliary polycarbonate have a weight average molecular weight of from 5,000 to a value of 1.1.times.(weight average molecular weight of the main polycarbonate).

The weight of auxiliary polycarbonate is generally in the range of from 1/200 to 1/20, based on the weight of the main polycarbonate.

A suitable weight ratio of an additive to an auxiliary polycarbonate is determined, depending on the weight ratio of the auxiliary polycarbonate to the main polycarbonate. For uniformly dispersing an additive in a main polycarbonate efficiently, the weight ratio of an additive to an auxiliary polycarbonate is generally in the range of from 0.002/100 to 100/100.

As mentioned above, by the method of the present invention, an additive can be uniformly dispersed in a molten polycarbonate without dissolving the additive in a solvent, so that a homogeneous polycarbonate composition can be obtained. Because no solvent is used for dispersing an additive, such as a thermal stabilizer, lowering of the thermal stability of the polycarbonate composition can be avoided, so that the polycarbonate composition produced by the method of the present invention has various excellent properties, such as excellent thermal stability. Therefore, the polycarbonate composition produced by the method of the present invention can be advantageously used in various application fields.

The polymerization reaction conditions in both of first agitation type polymerizer vessels 3A and 3B were as follows: the reaction temperature was 180.degree. C., the reaction pressure was atmospheric pressure, and the flow rate of nitrogen gas was 2 liters/hr.

In operation, polymerizing materials [a monomer mixture of bisphenol A and diphenyl carbonate (each being substantially free of a chlorine atom) in a molar ratio of 1:1.10 and, as a catalyst, disodium salt of bisphenol A (the molar ratio of disodium salt of bisphenol A to bisphenol A in the monomer mixture was 2.8.times.10.sup.-8 :1)] were charged into each of first agitation type polymerizer vessels 3A and 3B. The monomer mixture in polymerizer 3A was

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polymerized in a molten state while agitating for 5 hours to obtain prepolymer 4A. Outlet 5A was opened, and prepolymer 4A was fed to second agitation type polymerizer vessel 3C, having a capacity of 500 liters, at a flow rate of about 90 liters/hr."

USP 5932683 discloses is a polycarbonate comprising a plurality of aromatic polycarbonate main chains, wherein the aromatic polycarbonate main chains collectively contain specific heterounits in a specific amount in the polycarbonate main chains. The polycarbonate of the present invention can be obtained by controlling the temperature of and the residence time of the polymerizable material in the reaction zones of the reaction system so as to satisfy the specific requirements. The polycarbonate of the is advantageous in that not only does it have high transparency and colorlessness as well as high mechanical strength, but also it can exhibit high non-Newtonian flow properties, so that it exhibits high molding melt fluidity. See cols. 2-8.

USP 5852156 discloses a polycarbonate composition comprises (a) a substantially chlorine-atom free, aromatic dihydroxy compound/carbonic diester transesterification polycarbonate, and the following components (b), (c) and (d) in specifically, extremely limited amounts, wherein component (b) is at least one metal selected from an alkali metal and an alkaline earth metal, component (c) is an aromatic monohydroxy compound, and component (d) is at least one member selected from an oligomer having a weight average molecular weight of 1,000 or less and a residual monomer. This polycarbonate composition is substantially free from occurrence of crazing, even when it experiences moist heat, and especially even when it has been recycled. Further, when this polycarbonate composition is continuously injection-molded, not only can the

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molding be carried out with less necessity of interruption for mold cleaning, but also even when the continuous molding is interrupted for mold cleaning or for other reasons and then restarted, occurrence of unfavorable phenomena (such as deposition of black spots, i.e., carbonized material waste, and development of brown streaks, uneven color and the like) can be effectively suppressed. See also cols. 1-4

USP 5719254 discloses a transesterification polycarbonate composition which is insusceptible to discoloration. As a result, it has surprisingly been found that, when the proportion of terminal hydroxyl groups of a transesterification polycarbonate is at least 20 mol %, the polycarbonate is insusceptible to discoloration during production thereof and molding thereof. Conventionally, for the purpose of suppressing the discoloration of a transesterification polycarbonate composition, there have been no proposals in which attention is paid to the proportion of terminal hydroxyl groups in all terminal groups. This is considered to be due to the following well known fact that when the proportion of terminal hydroxyl groups in all terminal groups of a polycarbonate produced by the phosgene process is increased, not only cannot the discoloration be suppressed, but also the thermal stability and hydrolysis resistance of a molded article produced from the polycarbonate become poor. In fact, all the polycarbonate compositions on the market, which are produced by the phosgene process, have terminal hydroxyl groups in a proportion of not more than 15 mole %, based on the molar total of all terminal groups thereof. See also cols. 1-4

As shown above, each of the references discloses a polycarbonate prepared from the same components as claimed by applicants.

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In view of the above, there appears to be no significant difference between the reference(s) and that which is claimed by applicant(s). Any differences not specifically mentioned appear to be conventional. Consequently, the claimed invention cannot be deemed as novel and accordingly is unpatentable.

However, in the interest of expediently continuing prosecution, in the event that applicants' arguments in the response adequately provide evidence or a reasonable presumption that the above 102 rejection is considered not to have sufficient specificity according to MPEP 2131.03:

2131.03 Anticipation of Ranges

I. A SPECIFIC EXAMPLE IN THE PRIOR ART WHICH IS WITHIN A CLAIMED RANGE ANTICIPATES THE RANGE

"[W]hen, as by a recitation of ranges or otherwise, a claim covers several compositions, the claim is 'anticipated' if one of them is in the prior art." *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985) (citing *In re Petering*, 301 F.2d 676, 682, 133 USPQ 275, 280 (CCPA 1962)) (emphasis in original) (Claims to titanium (Ti) alloy with 0.6-0.9% nickel (Ni) and 0.2-0.4% molybdenum (Mo) were held anticipated by a graph in a Russian article on Ti-Mo-Ni alloys because the graph contained an actual data point corresponding to a Ti alloy containing 0.25% Mo and 0.75% Ni and this composition was within the claimed range of compositions.).

II. PRIOR ART WHICH TEACHES A RANGE OVERLAPPING OR TOUCHING THE CLAIMED RANGE ANTICIPATES IF THE PRIOR ART RANGE DISCLOSES THE CLAIMED RANGE WITH "SUFFICIENT SPECIFICITY"

When the prior art discloses a range which touches or overlaps the claimed range, but no specific examples falling within the claimed range are disclosed, a case by case determination must be made as to anticipation. In order to anticipate the claims, the claimed subject matter must be disclosed in the reference with "sufficient specificity to constitute an anticipation under the statute." What constitutes a "sufficient specificity" is fact dependent. If the claims are directed to a narrow range, and the reference teaches a broad range, depending on the other facts of the case, it may be reasonable to conclude that the narrow range is not disclosed with "sufficient specificity" to constitute an anticipation of the claims. See, e.g., *Atofina v. Great Lakes Chem. Corp.*, 441 F.3d 991, 999, 78 USPQ2d 1417, 1423 (Fed. Cir. 2006) wherein the court held that a reference temperature range of 100-500 degrees C did not describe the claimed range of 330-450 degrees C with sufficient specificity to be anticipatory. Further, while there was a slight overlap between the reference's preferred range (150-350 degrees C) and the claimed range, that overlap was not sufficient for anticipation. "[T]he disclosure of a range is no more a disclosure of the end points of the range than it is each of the intermediate points." *Id.* at 1000, 78 USPQ2d at 1424. Any evidence of unexpected results within the narrow range may also render the claims unobvious. The question of "sufficient specificity" is similar to that of "clearly envisaging" a species from a generic teaching. See MPEP § 2131.02. A 35 U.S.C. 102/ 103 combination rejection is permitted if it is unclear if the reference teaches the range with "sufficient specificity." The examiner must, in this case, provide reasons for anticipation as well as a *reasoned* statement regarding obviousness. *Ex parte Lee*, 31 USPQ2d 1105 (Bd. Pat. App. & Inter. 1993) (expanded Board). For a discussion of the obviousness of ranges see MPEP § 2144.05.

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III. PRIOR ART WHICH TEACHES A VALUE OR RANGE THAT IS VERY CLOSE TO, BUT DOES NOT OVERLAP OR TOUCH, THE CLAIMED RANGE DOES NOT ANTICIPATE THE CLAIMED RANGE

"[A]nticipation under § 102 can be found only when the reference discloses exactly what is claimed and that where there are differences between the reference disclosure and the claim, the rejection must be based on § 103 which takes differences into account." *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985) (Claims to titanium (Ti) alloy with 0.8% nickel (Ni) and 0.3% molybdenum (Mo) were not anticipated by, although they were held obvious over, a graph in a Russian article on Ti-Mo-Ni alloys in which the graph contained an actual data point corresponding to a Ti alloy containing 0.25% Mo and 0.75% Ni.).

, the following rejection under 35 USC § 103 is as follows:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over USP 5972273 or USP 5932683 see above.

The reference discloses a the polycarbonate process prepared from the same components as claimed by applicants except for the particular range or points as claimed. However, it would have been obvious to one of ordinary skill in the art to envisage the limitations or range as claimed since such selection overlaps or falls within that which is disclosed.

2131.03 Anticipation of Ranges**I. A SPECIFIC EXAMPLE IN THE PRIOR ART WHICH IS WITHIN A CLAIMED RANGE ANTICIPATES THE RANGE**

"[W]hen, as by a recitation of ranges or otherwise, a claim covers several compositions, the claim is 'anticipated' if *one* of them is in the prior art." *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985) (citing *In re Petering*, 301 F.2d 676, 682, 133 USPQ 275, 280 (CCPA 1962)) (emphasis in original) (Claims to titanium (Ti) alloy with 0.6-0.9% nickel (Ni) and 0.2-0.4% molybdenum (Mo) were held anticipated by a graph in a Russian article on Ti-Mo-Ni alloys because the graph contained an actual data point corresponding to a Ti alloy containing 0.25% Mo and 0.75% Ni and this composition was within the claimed range of compositions.).

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When the prior art discloses a range which touches or overlaps the claimed range, but no specific examples falling within the claimed range are disclosed, a case by case determination must be made as to anticipation. In order to anticipate the claims, the claimed subject matter must be disclosed in the reference with "sufficient specificity to constitute an anticipation under the statute." What constitutes a "sufficient specificity" is fact dependent. If the claims are directed to a narrow range, and the reference teaches a broad range, depending on the other facts of the case, it may be reasonable to conclude that the narrow range is not disclosed with "sufficient specificity" to constitute an anticipation of the claims.

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"[A]nticipation under § 102 can be found only when the reference discloses exactly what is claimed and that where there are differences between the reference disclosure and the claim, the rejection must be based on § 103 which takes differences into account." *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985) (Claims to titanium (Ti) alloy with 0.8% nickel (Ni) and 0.3% molybdenum (Mo) were not anticipated by, although they were held obvious over, a graph in a Russian article on Ti-Mo-Ni alloys in which the graph contained an actual data point corresponding to a Ti alloy containing 0.25% Mo and 0.75% Ni.).

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-6 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a process having the specific parameters, i.e. molar ratios, temperatures, and limit of oxygen in ppm, does not reasonably provide enablement for any type of process for making an aromatic polycarbonate in the molten state. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make any use the invention commensurate in scope with these claims.

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Case law holds that applicant's specification must be "commensurately enabling [regarding the scope of the claims]." See *Ex Parte Kung*, 17 USPQ2d 1545, 1547 (Bd. Pat. Appl. Inter. 1990). Otherwise **undue experimentation** would be involved in determining how to practice and use applicant's invention. The test for undue experimentation as to whether or not all compounds within the scope of claims 1-6 can be used as claimed and whether claims 1-6 meet the test is stated in *Ex parte Forman*, 230 USPQ 546, 547 (Bd. Pat. Appl. Inter. 1986) and *In re Wands*, 8 USPQ2d 1400 (Fed. Cir. 1988). Upon applying this test to claims 1-6 it is believed that undue experimentation **would** be required because:

(a) *The quantity of experimentation necessary* is **great** since claim read on any type of process having specific parameters, i.e. molar ratios, temperatures, and limit of oxygen in ppm outside of those disclosed in the specification

In light of the above factors, it is seen that undue experimentation would be necessary to make and use the invention of claims 1 -6.

Although the CCPA has criticized the use of the characterization "too broad" or "undue breadth"....however, an application whose claim(s) are of a breadth which are not adequately supported by its specification is in violation of 35 USC 112, first paragraph. *In re Borkowski et al.*, (CCPA 1970) 424 F2d 904; *In re Wakefield*, (CCPA 1970) 422 F2d 897; *In re Hammack*, (CCPA 197)

Correspondence

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Terressa M. Boykin whose telephone number is 571 272-1069. The Examiner can normally be reached Monday- Friday 9:30-6:00 (work at home).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on 571 272-1078.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Terressa M. Boykin/

Primary Examiner, Art Unit 1796